GrummanWorld

Volume 8, Number 21 | Our Employees Are Our Major Shareholders | November 10, 1989

House-Senate Conference Committee OK's Purchase Of 18 F-14D Tomcats

On Thursday, November 2, the House - Senate authorization conferees agreed to fund the purchase of 18 F-14D fighter jets in the fiscal 1990 defense authorization bill.

"The decision by the conference committee to authorize new F-14D's is certainly good news, but this is only one more step in the process," says Grumman Chairman John O'Brien. "Now the appropriations conference committee must act, then both houses must pass both bills. Finally, the President must sign the two bills before the funds are actually in place.

"However, I am optimistic," he adds. "There is a clear requirement for more F-14D's and our congressional delegation is doing an excellent job in making their colleagues understand that. It's too early to celebrate, but we can all be pleased at the progress being made."

The agreement on the F-14D includes a provision to terminate production after the 18 fighters are built. It would take about three years to complete the 18-plane order.

The compromise budget provides $1.644 billion for 18 new planes. The House had approved $1.17 billion for the 'D' version and an upgrade of the existing 'A' model; the Senate had approved $689 million for the upgrade only.

The compromise budget would also contain funds to upgrade six existing F-14s into the "D" configuration, with improved electronics and more powerful engines.

On the appropriations side, the House has slated $1.2 billion for 24 F-14s, while the Senate Appropriations committee has no such funding. The conferees who will iron out the differences between the two have not yet been named.

The F-14D termination agreement has not yet been drafted. At presstime, the only public document was a press release of the conference committee's decision.

"The Navy would ultimately write the termination contract," says Dana McGee, vice president - Congressional Liaison. "It's a gray area that will have to be analyzed by our attorneys when they receive the final wording."

The conference committee also approved funding for four E-2C Hawkeyes. It did not fund the EA-6B Prowler. Four EA-6B's had been part of a separate bill, funding the National Guard and Reserves, but were taken out.

In last Thursday's release, however, the committee acknowledged the Navy's shortfall of EA-6B's and suggested that the Navy consider reprogramming funds for this aircraft. The House has appropriated $423.2 million for 12 EA-6Bs. The EA-6B isn't in the Senate appropriations bill.

The ranking Republicans on the Armed Services panels, Senator John Warner of Virginia and Representative William Dickinson of Alabama, said they expected presidential approval of the package, noting that Defense Secretary Richard Cheney had been brought into the negotiations. In a statement issued by the Pentagon, Cheney said he was "generally pleased" with the bill.

The Strategic Defense Initiative took a heavy cut in the compromise bill, ending up with $3.79 billion for development funds. This is the first decrease in funding since SDI was proposed six years ago by former President Ronald Reagan. Pentagon officials have said the cuts will slow its development.

The budget eliminates one of the three B-2 Stealth bombers the White House sought to build. The compromise bill also includes funding for: the V-22 Osprey, the Marine Corps' troops transporter; and the MX and Midgetman missiles.

The V-22 will receive about $255 million in development funds, but nothing for procurement. The V-22 would instead have to attract sales from the commercial sector.

"From the very beginning, we saw getting through the authorization conference committee as a major battle," says McGee. "So we feel a great sense of accomplishment."

Another Step Reached. *The House-Senate conferees reached a compromise on the fiscal 1990 defense authorization bill on November 2. They agreed to fund 18 new F-14D's. (Photo by Gerry Costello)*

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Grumman Reports Third Quarter Earnings

On November 1, Grumman Corporation reported third quarter net income of $16.9 million or 48 cents a share compared to $22.5 million or 66 cents a share in the year-ago quarter. The 1988 results included an after-tax benefit of $11.1 million or 34 cents a share resulting from an accounting adjustment for state franchise taxes.

Quarterly sales increased nine percent to $905.4 million from $831.5 million primarily due to increased sales in the aerospace segment.

The 1989 effective federal tax rate was reduced in the quarter to reflect tax credits and other adjustments. Third quarter net income included about $1.6 million or five cents a share from the tax rate adjustment for the first six months earnings.

Increased borrowings brought interest expense in the quarter to $25.1 million, up $3.5 million from a year ago. Research and development expenditures were down $2.9 million from last year's $4.3 million.

For the first nine months, net income was $52.5 million or $1.50 a share on sales of $2.69 billion, compared to $62.3 million or $1.80 a share on sales of $2.61 billion in 1988. Included in the 1989 results was $4.5 million for the expected recovery of product improvement costs on several F-14 contracts reported in the second quarter. Last year's nine months results included the $11.1 million state tax adjustment.

In the aerospace segment, third quarter sales increased $63.9 million to $668.2 million. Operating income was $35.7 million compared to last year's $39.7 million which included the state tax adjustment equal to $16.8 million in pretax income. After deleting last year's unusual item, operating margins increased to 5.3 percent from 3.8 percent primarily from increased profits on the F-14 program.

In the electronics systems segment, sales declined six percent to $105.6 million as a result of fewer test equipment deliveries and reduced requirements for Grumman aircraft. The third quarter results included a charge of $4 million for the previously announced closing of the Tachonics subsidiary which manufactured gallium arsenide electronic components. For the first nine months, $7.5 million was charged against earnings for Tachonics. Last year the subsidiary lost $4.9 million in the nine month period. Successful radar test flights continued on the U.S. Air Force/Army Joint STARS radar program. Nevertheless, as previously reported, the effects of a nine-month slip in the original program schedule continue to be analyzed.

Quarterly sales in the special purpose vehicle segment increased to $98 million from $90 million and income was $3.2 million, up from $238,000. The Postal Service delivery truck program continued its strong performance with 14,545 vehicles delivered in the first nine months of the year.

Information and other services segment quarterly sales increased to $132.3 million from $128.7 million due to increased activity in the Space Station Program Support and Technical Services Divisions. Operating income of $11.9 million was down $1.5 million due to high start-up costs on new programs in the Data Systems Division.

"Our operating income was significantly higher in the quarter when we deduct last year's unusual item but increased interest costs continued to depress these gains," said John O'Brien, chairman. "Our 5.8 percent operating margin for the nine months shows that we are controlling our costs and improving our efficiencies.

"Grumman's $6.9 billion backlog continues at a high level and is spread across our entire product line with the Navy, Air Force, Army, NASA and the Postal Service well represented," O'Brien said. "In addition, our international business continues to grow.

"I expect continued support for the F-14 Tomcat and other major Grumman programs when the 1990 defense budget is approved in Washington."

25-Year Luncheon: December 5 Crest Hollow Country Club, Jericho, L.I.

Consolidated Financial Data

Grumman Corporation And Subsidiaries

(Unaudited) ($ In Thousands Except Per Share Amounts)

	Three Months Ended September 30,		Nine Months Ended September 30,	
Condensed Income Statement	1989	1988	1989	1988
Sales	$ 905,389	$831,512	$ 2,692,210	$ 2,613,206
Income Before Taxes	22,036	34,239	75,501	94,432
Provision for Federal Income Taxes	5,100	11,700	23,000	32,100
Net Income	$ 16,936	$ 22,539	$ 52,501	$ 62,332
Earnings Per Share:				
Primary	$.48	$.66	$1.50	$1.80
Fully Diluted	.48	.65	1.50	1.79

Balance Sheet Data At September 30,	1989	1988
Working Capital	$ 1,064,647	$ 948,873
Net Property, Plant and Equipment	546,287	579,488
Long-term Debt	865,707	808,358
Preferred Stock	39,366	42,587
Shareholders' Equity - Common	810,817	765,506
Shareholders' Equity per Common Share	$24.60	$23.41
Common Shares Outstanding	32,962,932	32,697,274
Backlog At September 30,	$6.9 Billion	$7.9 Billion

First Flight. *On October 30, Grumman flew its first tests of the new Advanced Capability EA-6B Prowler. This fifth major upgrade of the Prowler will counter the growing enemy radar threat into the next century. It features two new passive detection systems: the receiver processor group, and the ALQ-149 communication intercept and jamming system.*

Newest Tomcats Soon Going To Sea

The first two squadrons to fly Grumman's latest version of the Tomcat fighter — the F-14A(PLUS) — just finished work-ups. Next assignment for squadrons VF-142 and -143: the Mediterranean for the first deployment of the high-powered new air superiority fighter.

Work-ups are a Navy air wing's equivalent of Olympic trials: the test before the real competition. "Everything we've heard from all the test programs and trials tells us that Navy pilots are pleased with the capabilities of the A(PLUS)," says F-14 Program Vice President Dan O'Neill. "While the F-14D congressional deliberations on the fiscal 1990 procurement are going on, the accomplishments of the F-14A(PLUS) have reinforced our enthusiasm for the aircraft's potential."

The two squadrons are part of the first air wing to use the A(PLUS). The air wing returned last week from work-ups off the Virginia coast aboard the carrier *Eisenhower*. The *Eisenhower* is scheduled to start its tour of duty in the Mediterranean next March.

In August, the air wing completed its three weeks of exercises at Naval Air Station Fallon. At this Nevada training ground, the fighter, attack and support squadrons of the air wing trained by practicing simulated missions together, sometimes against aggressor squadrons. It was the first time that F-14A(PLUS)'s had faced aggressor squadrons.

According to Grumman field rep Bruce Fenstermaker, the Tomcats performed impressively. He wrote in his report back to Bethpage that the leaders of the two squadrons said that the Tomcats' performance "is all they expected, and then some. Fallon adversary aircrews were particularly impressed with the aircraft's speed and maneuverability."

During the week of August 23, the two Tomcat squadrons competed in an air-to-ground gunnery derby against the air wing's two F-18 squadrons. When the smoke had cleared VF-143 had won the derby and VF-142 came in second.

Grumman is building 70 F-14A(PLUS) aircraft. Thirty-eight of them will be brand new and 32 will be remanufactured. The first new one was number 558. Grumman just delivered number 589. Twenty-six remanufactured planes have already been delivered. The two Eisenhower squadrons have 20 Tomcats between them in a mixture of new and remanufactured F-14A(PLUS)'s.

According to F-14 Field Operations and Modifications manager Ron Bransfield, a second F-14A(PLUS)-equipped air wing is now getting ready to go to the Med in June aboard the *U.S.S. Saratoga*. VF-74 and VF-103 are preparing for work-ups with some preliminary exercises off the Virginia coast.

"We also started delivery to the West Coast," says Bransfield. VF-24 and VF-211 will get the A(PLUS).The East Coast training squadron at Oceana Naval Air Station in Virginia, where both East and West Coast pilots are being trained, also has them.

"Eventually there will be two East Coast air wings flying the A(PLUS) and one on the West Coast," Bransfield says. "So when we start delivering the F-14D's they will go to the West Coast first."

There are two remanufactured planes at VX-4, the development squadron at Pt. Mugu, California. The Naval Air Test Center at Patuxent River, Maryland, has one new and one remanufactured Tomcat. The new one is now being used to test an automated system for carrier landings.

Coming Attraction. *While the F-14A(PLUS) is almost ready for deployment, the F-14D development aircraft is undergoing a battery of tests at Calverton Operations on Long Island. (Photo by Bob Sagliocca)*

Grumman World — Vol. 8, No. 21, November 10, 1989. Published twice a month for active and retired employees of Grumman Corporation. 1111 Stewart Ave., Bethpage, N.Y. 11714. W.B. Jones, Vice President-Public Affairs.

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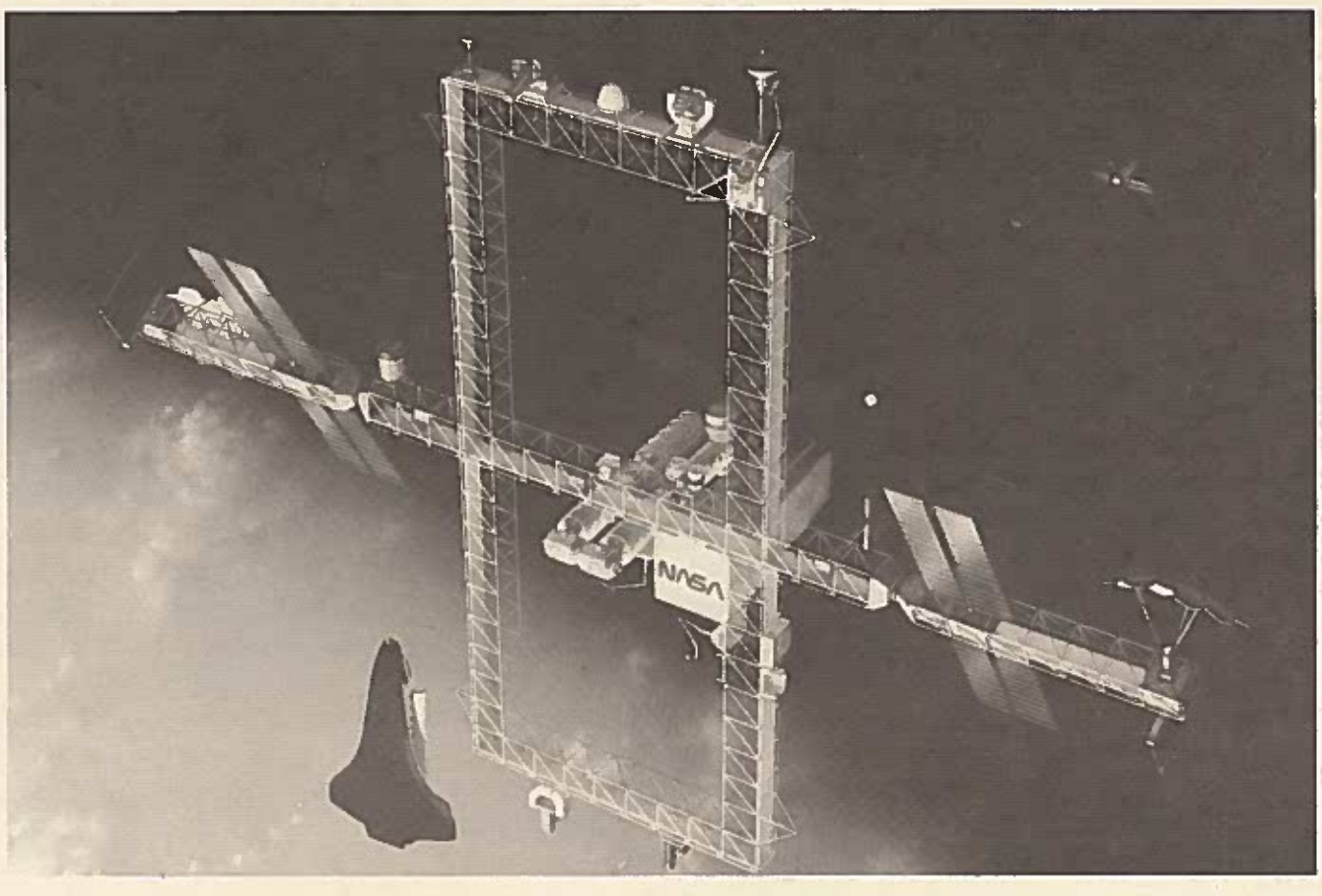

Still Under Review. *NASA recently unveiled its plan to rephase the Space Station Freedom program. The new schedule is now being reviewed by the Office of Management and Budget. The latest plan calls for the space station to be completed by July 1999, a year and a half later than originally planned. The first part of the station is still slated for a March 1995 launch date. However, the space station will not be ready for astronauts until April 1996.*

I Heard It At The Pin Meeting:

O'Brien Discusses Foreign Sales, A-6, Future Work

On Friday, October 27, Grumman Chairman John O'Brien answered the following questions at the pin meeting in Corporate Headquarters:

Around 120 U.S. fighter aircraft — F-16s or F-18s — are being sold to South Korea. Why wasn't the F-14 considered? What is being done to sell the Tomcat abroad?

O'Brien: In order to sell overseas, we have to get permission from the State Department and the Defense Department. And it's very hard to get export licenses for airplanes as potent as the F-14.

However, we have gotten permission to have the Koreans, the Europeans and the Japanese look at EA-6B's.

My immediate supervisor has taken a course of action pertaining to the technology available to us that I consider inefficient. You know that you can't batter your bosses. Is there someone I can talk to about this?

O'Brien: I understand that you can't batter your bosses; it's not a healthy proposition in many cases. But if you feel strongly about something, you can go to your boss's supervisor. As a decent person, you should tell your boss that you're going there because you disagree with him.

You're entitled to disagree with your boss. A lot of people disagree with me. My view is that there are 30,000 people in Grumman. I'd like all 30,000 people thinking about how Grumman can get the job done better.

Are there any new business horizons for the Air Force?

O'Brien: The Air Force is the managing agent for BSTS. We are competing against Lockheed. That competition will be decided in early 1991. That would be a $5- to $10-billion program for Grumman, if we win. Plus it would be a whole new business.

Now, so you all understand how long these things take, BSTS uses a sensor which we are building in our Irvine, California, labs. We started making investments in that sensor technology 20 years ago. But now it's brought us into a new market.

We're flight testing Joint STARS and doing very well. It's the world's biggest software job at the moment. It's another $5- to $10-billion program, with a lot of overseas market potential.

Any Questions? *Grumman Chairman John O'Brien fielded questions at the recent pin meeting in Corporate Headquarters. (Photo by Ken Johnson)*

We've also got IFTE with the Army, another billion dollar program. It's just starting to go into production. The big production orders don't hit until 1991.

Next year, the first preliminary requirements for the ATS — Advanced Tactical Surveillance — aircraft for the Navy will come out. We're investing millions of dollars a year to prepare for that competition.

We've booked $850 million worth of foreign sales this year. That's orders booked. And it looks like another billion dollars worth of orders in foreign sales next year. That's not even counting EA-6B's. So there's a large world out there for us to conquer. But to conquer it, we've got to stop moping around and stop doing things the way we did them yesterday.

There are bright, brilliant people in this place. Let's get ideas about how to do things. Let's get new ideas how to be efficient. Don't just do it this way because the guy before you did it that way. If there's a better way to do it, let's get on with it.

We've got a $7 billion backlog. That's two times our annual sales already booked and signed up in contracts. Sure things are tough, sure we've got to reduce costs, we've got to change things. Yes, some people will leave and more people will come aboard. We lost 2,700 people this year because they quit.

We hired 1,300 people. It goes on every day. And we'll lose more people next year. People left us because they are worried about the F-14. That's human nature. I understand that.

What about the prospects for more subcontract work, particularly those involving engineering?

O'Brien: We're looking hard at it. We're working with British Aerospace on a subcontract right now that may involve a couple hundred of our engineers.

Our problem with subcontract work is that you're expected to finance that manufacturing work. And with our debt and the finance rates, it's a real burden to borrow money and pay 10 percent interest. You never win at that. So we examine lots of subcontract opportunities, because we have to be able to be efficient enough to make money at it. We're making money on the 767's and 757's now, but we weren't for several years. It's a long-term investment in a tough marketplace.

Engineering contracts are done a little differently because they basically pay us for the services every month, and we pay the salaries of the engineers. I think the British Aerospace job will be very interesting if we can win it.

Do you see anything in the future for the A-6?

O'Brien: I see a lot of reworks and updates, most of which will come to Grumman. They are never going to buy 469 A-12s to replace all the A-6s out there, because the A-12 is very expensive.

I think the A-6 is going to be kept alive a long, long time and we're going to have a big hand in keeping it alive, if we play our cards smart.

Will the Navy buy new ones? That's a tremendous long shot. I doubt that. But we'll get a lot of upgrade work on them.

Seminar Series Stresses Wellness

Grumman's Benefits and Medical departments have put together another series of wellness seminars for Grummanites. "Wellness" is a term used by insurance and health professionals to describe the state of being well. The wellness seminars help people learn the steps they can take to reduce the risk of serious illness. The seminars are being sponsored by the health maintenance organizations (HMOs) on Long Island that serve Grumman people.

"Wellness programs can help people stay healthy and as a result, can reduce insurance claim costs for companies," says Lynn Schiller, senior insurance administrator for Grumman's Benefits Department. "We are also trying to set up similar programs with the HMOs that serve our people off Long Island."

In addition to a repeat of the Lyme disease program held last summer, the program will include such topics as: stress, aging parents, alcoholism, and working parents. No reservations are needed.

Program	Location	Date/Time	Sponsor
Single Parenting	Great River	Nov. 15, 12-12:40 p.m.	Empire Healthnet
Great American SmokeOut	GHQ	Nov. 16, 12-1 p.m.	U.S. HealthCare
Effects of Alcoholism in the Family	GHQ	Dec. 6, 12-1 p.m.	U.S. HealthCare
Conflict of Working Parents	Calverton	Dec. 14, 11:50-12:30 p.m.	U.S. HealthCare

Shuttle Team Takes Loss Of NASA Award In Stride

KENNEDY SPACE CENTER, Fla. — Grumman Technical Services wasn't the winner of the 1989 NASA Excellence Award for Quality and Productivity. But the Grummanites here are a resilient crew.

They are honored just to be among the eight finalists for the award — and plan an even more aggressive effort to win next year.

The award went to three-time finalist Lockheed Engineering and Sciences Company of Houston, Texas.

NASA Deputy Administrator J.R. Thompson announced the selection at the sixth annual NASA/Contractors Conference, Huntsville, Alabama.

Companies are graded on customer satisfaction, contract performance, quality and productivity, health and safety, energy conservation, management commitment to quality, and communication.

"But we *are* winners," says Skip Olson, program vice president for the division's Shuttle Operations and Engineering Services Contract. "We are the only subcontractor ever named as a finalist. We've gained a lot of experience from this venture. NASA expects to have four times as many entries next year. We intend to give them all a helluva race."

"As one of eight finalists, Grumman still has a lot to be proud of," says Rich Biondi, manager, In-Place Calibration Group. "There are hundreds of NASA contractors who didn't make the list. Our attitude is, we didn't lose — we were one of eight winners."

Biondi says the review process made him aware of areas in his organization to be improved.

"We don't own test equipment — we provide calibration service," says Biondi. "I've proposed an over-the-shoulder inspection of a crew as it does its job. We want to make sure the people doing the job always use the right equipment, techniques, and standards."

Jackie Patten, Grumman's manager of the Integrated Checkout Control and Monitoring Subsystem, says, "I felt we won something to begin with by being in the final eight. I would like to review Lockheed's presentation, and compare it to ours, but I don't know if we'll have that opportunity."

On November 14, Grumman will be debriefed by NASA officials about its strengths and weaknesses. "Right after that, we'll begin to work on next year's application for the award," says Patten. "We'll work on correcting any deficiencies NASA points out."

"Everybody who worked on the nominating process looked at it as a positive experience," says Carol Pujazon, an operations planner/ coordinator for Grumman's Instrumentation Requirements Department at the center.

"We learned the importance of each other's jobs and how we function as a team," she adds. "Although we're disappointed, we plan to apply what we've learned and go after it again.

"No other organization has won this award the first time out," says Pujazon. "Our spirits are still pretty high — look out for us next year."

Tweaking The System. *At Kennedy Space Center, telemetry technician Joe Gonzales adjusts a data gathering device. Despite losing this year's NASA Excellence Award, the crew there looks forward to next year.*

Space Systems Makes The Cut In Army Power Supply Competition

Grumman Space Systems Division is one of two finalists in an Army competition to develop a non-nuclear power supply design for the planned space-based neutral particle beam platform. A neutral particle beam system would be able to discriminate between warheads and decoys released by attacking intercontinental ballistic missiles. A more powerful version could also destroy those warheads.

The Army Strategic Defense Command has pared the number of competitors down to the Grumman-led team and another led by McDonnell Douglas. Grumman has received a $5.7 million contract to develop its power supply concept. This effort will culminate in a preliminary design review after 12 months. Following that, the Army will choose a design for the 45-month long ground test demonstration phase of the Power System Demonstrator program.

Grumman is teamed with the Rocketdyne division of Rockwell International. Rocketdyne will develop the component that generates the raw power; Grumman's job is to design the system that converts that power into the radio frequency (RF) electricity required for the neutral particle beam device. Space Systems' Energy Group expects to have around 25 Grumman and Rocketdyne people working on the project at the peak of phase one.

The eventual power plant must orbit dormantly for years until a nuclear missile attack might occur. Then, it would have to instantly generate millions of watts of electrical energy over the several minutes that the attack would last. Grumman's designers have some difficult choices to make in the next year.

"The object of this phase is to assess all the technologies and figure out what technology is going to be most appropriate for the neutral particle beam platform," says Bob Bullis, Power System Demonstrator program manager.

Though the Army has given the two teams free rein to evaluate any technologies wanted, the service has encouraged that they investigate turbo-alternators and fuel cells for the raw power and two particular RF systems.

A high voltage turbo-alternator is similar to steam turbines used in power plants on Earth. However, the space-based generator would be driven by the burning of hydrogen.

The other possible technology, a fuel cell system, is like the fuel cells that generate electricity for the space shuttles.

"But there are problems with both technologies," says Bullis.

One of the major problems is dynamic disturbances — the shaking or pushing of the platform by the electric generating system. In the case of a neutral particle beam device, any disturbance would be like pulling a sharpshooter's arm while he's firing at a target.

"When the turbo-alternator's turbine spins it tries to twist the platform," Bullis says. Solving the turbo-alternator's tendency to twist the platform will probably mean having a pair of synchronized alternators that spin in opposite directions. In addition, these power plants tend to be big.

The low voltage fuel cell concept promises jiggles and jolts, too. Though the electricity is created by a simple chemical reaction of hydrogen and oxygen, the system needs pumps and valves to deliver the chemicals. Their operation may shake the platform.

To convert the raw power, Space Systems will analyze high voltage, tube-based RF systems, which are similar to systems used on aircraft, and solid state RF systems.

"Our challenge is to look into a crystal ball and figure out which of these systems will have the performance the customer needs, and then put that in a design and eventually demonstrate the technology on the ground," says Bullis.

"For the next 12 months, we'll be doing paper studies and paper designs," he adds. "There'll be no hardware built. We'll pick the route we want to take and then develop a preliminary design for an inexpensive way to make a ground demonstrator."

Test Range Helps Grumman Planes Stay Invisible To Enemy Radar

CALVERTON, New York — Drive a mile down a deeply rutted road from the main complex here, and you'll come upon two wooden towers and a cluster of buildings and attached vans. You'll hear eerie beeps and buzzes. It's like being on the set of a science fiction movie.

This is Grumman's Electronic Warfare Test Range, where the company tracks and tests the radar and jamming capability of its aircraft. The range is used to simulate a hostile radar site for airborne test aircraft.

The range also performs precision tracking and works with Calverton's Automated Telemetry Station (ATS), where telemetry data from an aircraft is merged real-time with ground tracking data for test evaluation and real-time display. The data is used to check navigational accuracies and the precision of the air-to-air radar and missile systems.

It's like being on the set of a science fiction movie.

The range was originally set up to handle just the EA-6B Prowler, but now works with virtually all Grumman aircraft. This year, over two-thirds of the flights tracked have been F-14D's, with June the busiest month.

The range has 11 operating radar systems — from World War II-vintage to the very latest radars plus six other emitters. The range uses this variety of equipment to provide an extensive, real-time radar-frequency threat environment to the test aircraft. The two newest radars are mounted atop twin 50-foot towers.

"This is one of the largest privately owned facilities of its kind in the country," says Andy Novak, lead engineer at the site. There are some big government-owned operations like it at White Sands, New Mexico; Eglin Air Force Base, Florida; and Patuxent River, Maryland. There are smaller facilities at other aerospace companies.

"We average four to five flight trackings per day," says Novak. "At times, we may act like a hostile site, but we are user friendly. We can respond rapidly to changes in the test conditions, which might mean reconfiguring a number of radars to keep the test flight going."

There is direct radio communication with the Automated Telemetry Station (ATS), feeding the engineers and computers information on the radar signals being emitted.

'At times, we may act like a hostile site, but we are user friendly.'

In an EA-6B flight test, up to 16 radars or emitters and one tracking radar simulate a hostile environment for the test aircraft. By acting as a foe for the EA-6B, the range enables Grumman to fine tune the hardware and software that make up the plane's jamming system. This lets the attacking force evade enemy detection.

Each radar is given a two-word code name, beginning with the letter "B": the twin towers are "Blue Grass" and "Big George." The "B" stands for band, or segment of the radio-frequency spectrum; the first letter of the second word refers to the band in which the radar operates.

The flights take place in the air defense identification zone, which extends for 200 miles out into the Atlantic Ocean from Calverton and is restricted to military use. "Blue Grass" and "Big George" easily cover that area.

These two tracking systems, with special TV cameras and optics, can see stars in the daytime and use them as part of their calibration routine. The systems can also correct for the bending of the radar beam due to atmospheric conditions. An on-site weather station enables the operator to input accurate and timely weather information.

Since the Electronic Warfare Test Range is so isolated from the main complex, various systems are used to keep it aware of daily flight activities. A flight line surveillance camera monitors flight line activity. The Calverton Flight Test Scheduling System monitor displays up-to-the-minute status of flight in Calverton and Bethpage.

An identification friend-or-foe (IFF) system helps to quickly locate targets. IFF is a way in which codes are exchanged between an aircraft and a control tower to identify and locate the aircraft. These systems, the video from the tracking radars' cameras, and the emitter monitor enable the test conductor to keep track of what is going on in the air, on the ground and at the range.

A roomful of behind-the-scenes computers collects, formats, and records data on all the tracking radars and emitters, and tranmits it real-time to the ATS.

'This is one of the largest privately owned facilities of its kind in the country.'

The range has two SCR-584 radar systems, which were produced extensively in the U.S. in the 1940s and are still considered one of the finest tracking radars ever built. These radars were shipped to America's World War II Allies.

Recently, one of the SCR-584s was retired that had been given to the Soviet Union during that war. The Soviets supplied it to China, who in turn gave it to North Korea. It was captured by American forces during the Korean War and ended up at Grumman.

The range uses the SCR-584 as a hostile radar because it is still in widespread use throughout the world, and some potentially hostile countries have it. Inside these systems are the big glass radio tubes of the era. Such old technology makes getting parts for them rather difficult.

Under Control. *Bob Alvarez checks a radar on a flight control console. The Electronic Warfare Test Range is one of the largest privately owned facilities of its kind in the country. It averages four to five flight trackings a day. These exercises track and test the radar and jamming capability of Grumman aircraft. The range has 11 operating radar systems. (Photos by Gerry Costello)*

"We have a small machine shop out here, so we can occasionally make something from scratch if needed," says Novak.

"That's one of the interesting things about working out here — getting to see both yesterday's and tomorrow's systems," says Vic Rowe, an engineer at the range.

The range is isolated to keep it as far from populated areas as possible. In addition, it must not interfere with the ATS and other equipment at the main Calverton complex.

"We do have some potent stuff out here," says Novak. "Industrial Safety has taken readings on the ground while the equipment is running, at ground level at the range and the surrounding area. It found no harmful levels of microwave radiation. But we still take precautions."

When equipment is operating, a radiation hazard light will flash on the road leading to the range. Next to it is a phone that you have to use to ask for permission to enter the area.

The range is inside a thickly wooded area, but it wasn't planned that way: about 15 years ago, the Navy (which owns the Calverton facility) permitted a local Boy Scout group to plant trees as a conservation project. They grew more rapidly than predicted.

"Regretfully, we had to remove some of them just to be able to see our calibration spot," says Novak. "We had to cut some of them down. The range was originally meant to be temporary. We didn't think it would still be here by the time the trees grew that much."

Adding Up The Numbers. *Tony Badalucca, Mario Grzan, and Richard Bensky keep track of radar data in the Electronic Warfare Test Range's computer control center. These behind-the-scenes computers collect, format, and record data on all the tracking radars and emitters, and trasmit it real-time to Calverton's Automated Telmetry Station. The range was originally set up just to handle the EA-6B Prowler, but now works with virtually all Grumman aircraft.*

Speed On The Cycle Helps Companies Win The Race

(The following article was published in the October 29th issue of the Wall Street Journal. It was written by George Labovitz, president of ODI, Inc. Last year, Grumman hired the services of ODI to help set up the company's GQ program.)

The rationale for responding to your customers' needs faster than the competition can is clear: Your company will benefit in terms of market share, customer satisfaction and profitability. In fact, managers today are probably more aware of speed as a competitive variable than ever before. However, for many, managing speed does not come naturally.

"Most of us grew up believing in the axioms 'Haste makes waste' and 'Don't cut corners' — ideas that seem to run counter to the concept of managing speed," says Dean Cassell, vice president of product integrity at Grumman Corp. "But in the real world, you learn that speed and quality are not a trade-off. Speed is a component of quality — one of the things we must deliver to satisfy customers."

Companies that actually market speed as a part of their service train their managers to lead and

In the real world, you learn that speed and quality are not a trade-off.

participate in teams that increase speed and improve quality in everyday operations. Managers learn to spot opportunities to increase customer satisfaction through speed, and shift some responsibility for analyzing, improving and streamlining work processes from themselves to teams of employees.

One team at the Federal Express Ground Operations station in Natick, Mass., focused on a particularly time-sensitive operation: the morning package sort. Every morning, tractor-trailer trucks arrived at the Natick Ground Station from Boston's Logan Airport, carrying the day's package load. In peak periods that load may include 4,000 pieces. The packages must be sorted quickly and distributed to smaller vans for delivery, so couriers can be on the road by 8:35. No customer is present at the morning package sort, but the process is nevertheless critical to customer satisfaction.

GQ
Means Grumman Quality

"We're committed to deliver the customer's package by a stated time, usually 10:30," notes Glenn Mortimer, a Federal Express courier who led the Natick team. "The sooner our vans hit the road each morning, the easier it is for us to fulfill that obligation."

Following a problem-solving formula used by teams throughout Federal Express, members of the Natick team monitored the morning routine, carefully noting where and when the work group's resources were used effectively and where they were idle, waiting for others upstream in the process to send packages their way. "We suspected there was downtime built into our process. But we didn't know just where it was until we completed our data gathering," Mr. Mortimer says. "We used the data to redesign our sorting system and put our resources where they could do the most good." The team even created a points system to identify those couriers and subgroups that were doing the most to reduce package-sort cycle time. Winners of the friendly competition earn a steak dinner out with their spouses.

"Monitoring shows that the Natick team's new system really does reduce cycle time for the morning package sort," reports James Barksdale, chief operating officer at Federal Express. "The vans leave at least 15 minutes earlier, on average, than they used to. And service levels have inceased to the point where they're consistenly above 99%."

A cross-functional team at Union Carbide's Tonawanda, N.Y., facility, which produces air-

Managers in all three companies recognize speed as a component of quality and a key to customer satisfaction.

separation plants, followed a similar path to reduce manufacturing cycle time.

"The team included craftsmen from the shop floor as well as engineering, scheduling and purchasing personnel," reports Alan Westendorf, director of quality. "First, they produced a flowchart detailing the process by which an air-separation plant actually gets built. Then they identified snags in the process."

The Tonawanda team determined that holdups for inspections were the main problem and idenfified which kinds of delays involved critical inspections and which were less critical or could be handled by workers already on the line. The team then proposed modifications in their work process to management.

"The streamlined manufacturing process benefits our customers in at least two ways," Mr. Westendorf concludes. "First, we have better quality assurance than ever, because the people building

Speed is a component of quality — one of the things we must deliver to satisfy customers.

the product have taken on more responsibility for the quality of their own work. Second, we trimmed more than a month off the time required to deliver a finished product."

At Grumman's Aircraft Systems Division, a cross-functional team reduced the cycle time required to produce a new business proposal for an important government contract. The team was composed of representatives from engineering, manufacturing, corporate estimating, flight test, material, quality control, and other departments.

"We needed contributions from all these departments to generate the proposal," says Carl Anton, configuration-data manager for Grumman's A-6 combat aircraft program. "But instead of gathering their input piecemeal, we formed the team, which reached consensus on the proposal objectives and produced a statement of work to guide all the functions that were involved."

Armed with this shared understanding and requisite background information, each department developed its

At Grumman's Aircraft Systems Division, a cross-functional team reduced the cycle time required to produce a new business proposal for an important government contract.

specialized contribution to the proposal, submitting data and cost estimates on a closely managed schedule. "We cleared up questions and inconsistencies very quickly, because the people who had the skills and perspective required to resolve them were part of the task team," Mr. Anton explains.

The team trimmed more than two months from the cycle time previously required to develop comparable proposals. "The team eliminated the crisis mentality that proposal deadlines can generate. The result was a more thoughtful, complete and competitive proposal," Mr. Anton concludes.

The successes achieved at Federal Express, Union Carbide and Grumman suggest that managing speed may be an under utilized source of competitive advantage. Managers in all three companies recognize speed as a component of quality and a key to customer satisfaction. They effectively lead team efforts to reduce cycle time. And they prepare all their people to increase the speed and improve the quality of their own work.

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GQ Takes Time To Pass Out Plaudits

HEADQUARTERS, October 23, 1989 — Most evenings, the atrium in this building is so quiet you can almost hear a leaf falling from one of the story-high ficus trees.

But not this evening. This was a night for applause and praise as some members of GQ action teams and Grumman management gathered for GQ's third quarterly meeting. Nearly 100 people listened as four teams reported on the problems they've tackled.

Means Grumman Quality

After hearing the reports, Grumman Chairman John O'Brien said, "I am pleased to see more and more signs that we are trying to do things better."

However, O'Brien also said that the GQ effort needs to pick up speed. "I'd like to see the quality action teams come to conclusions quicker," he said. "That's one of our problems in this company.

"Win or lose the F-14 battle, it's going to get tougher and tougher out there," he said. "Unless we get quicker and quicker, we're going to get squeezed. That's the way the world is."

Data Systems' Bob Heise reported that his GQ team is trying to get answers quicker by consolidating "help desks." People call a help desk when they have problems with a Grumman computer system. Over the years Data Systems had set up 14 totally independent help desks. However, many users didn't know which help desk to call. The quality action team's solution: Data Systems is installing an automatic call distribution system in January, so customers can call one number for help. The new Customer Service Center will be located in Holtsville.

GQ Gathering. *On October 23, Grumman Chairman John O'Brien spoke to GQ members in the atrium of Corporate Headquarters.*

Dom Granite spoke about his Business Operations action team's numerous solutions to the problem of procedures. The solutions range from establishing 33 libraries which contain all the procedures to having special training sessions to educating staffs on how to follow the proper procedures. By January, all the changes should be in place.

Two other quality action teams reported on the effect of solutions they put in place months ago.

Corporate Procurement's Art Breitner explained how they cut the time it takes to analyze proposals from subcontractors. Last year, each cost and technical analysis took an average of over 100 days to complete. Thanks to the GQ team's solutions, they had cut the turnaround time to 83 days.

The evening's last report was by Aircraft Systems' Tom Capozzoli, whose team is trying to minimize the shortage of parts. The team started a pilot project in Calverton to verify the number of parts on hand against what the inventory record indicated. The team is launching a cycle inventory system across the company. Instead of counting everything once a year, they divide all parts into categories based on their cost and count the more expensive pieces more often. "Results thus far have been encouraging and underscore the value of this pursuing this objective," he said.

"GQ is not a spectator sport," said Dean Cassell, Grumman vice president and the head of the company's GQ effort. "It requires everyone's participation. 1990 is going to be a big year. Looking at the plans that all the various divisions have submitted, we'll have just about everyone in the entire corporation through the quality advantage training by this time next year."

He said there are already some 4,000 people trained and about 150 quality action teams at work. By the end of 1989, there should be about 120 facilitators.

Checkin' It Out. *Radio communications technician Ken Rafuse tests performance of hardware in the Calverton radio communications lab. The lab, located in the control tower, monitors and maintains all communications equipment for Calverton. Rafuse is also an FAA-certified air traffic controller. (Photo by Gerry Costello)*

Appointments Announced

Aircraft Systems

Bethpage Operations: Joseph Abbatiello, manager, Production; Alphonse Siani, manager, Production.

Integrated Logistics Support: Armand D'Amico, section head, Quality Assurance; James Quinn, program manager, F/EF-111; Robert Peters, program manager, A-6; George Muller, project manager, Program Controls.

Special Projects and Development Operations: Thomas Wynne, program manager, F-8 Program; Jose Diaz-Bujan, program manager, S2T Program.

Electronics Systems

Benton Park : Joseph Frisino, director, Quality Operations; Robert Helmer, director, Manufacturing; Gerald Samborsky, director, Material Operations; James Arnold, director, Manufacturing/Industrial Engineering and Facilities Planning.

Now Showing At Grumman: How To Do The Right Thing

There's a new feature being screened near you. It's called "Conduct Becoming and Unbecoming," and it was produced by Grumman.

This new videotape will eventually be shown to all Grummanites, and is an updated version of one produced about five years ago. It's a reminder to Grummanites that they must follow the company's Code of Business Conduct.

The code covers everything from filling out your time card to selling goods overseas or negotiating a major subcontract. Serious code violations are grounds for dismissal from the company.

For any business, being ethical makes good sense because customers can count on receiving fair treatment and a fair price. A tarnished reputation can mean loss of business. Since two-thirds of Grumman's business comes from U.S. government contracts, where the ultimate customer is the U.S. taxpayer, reputation is even more critical.

"The Grummanite has the responsibility not only to obey the letter of the law, but to avoid the appearance of wrongdoing," says Howard Dunn, vice president-Corporate Audit and chairman of the company's Business Ethics Committee. "Every employee working for a defense contractor has to be Mr. or Ms. Clean."

Grumman is governed by strict regulations. These include the Anti-Kickback Law of 1986, which provides penalties of 10 years in jail and fines up to $250,000. Such laws also can suspend a company from competing for future government contracts.

The one issue raised in the tape that is of widest-reaching concern is proper time-card charging. Incorrect time card information invalidates the entire invoice for a government contract.

"You won't go to jail for an honest mistake, but you will be dismissed and possibly go to jail for willfully falsifying information," says Dunn. "And no one in the company has the authority to ask you to charge your work to some project other than the one you're working on."

Other hypothetical dilemmas presented in the tape concern business relationships between Grummanites and people at other companies, either as supply buyers or in some other role.

One Grummanite interviewed asks whether it would be appropriate to purchase stock in a company with which his department does business. The tape points out that by owning stock in that firm, the Grummanite would have an interest in its growth and thus would not be able to deal with that firm impartially.

The video reminds Grummanites to be wary of accepting gifts from suppliers. The place to draw the line is at gifts of nominal value or of an advertising nature — such as a paperweight with the supplier's name on it.

Another Grummanite asked about the morality of paying a clerk or some other individual to get a job done in a foreign country. There is a limited exception where a ministerial or clerical employee refuses to perform his ordinary duties unless he is paid a small amount. The Grummanite can make such a payment: you just have to report it as a "facilitating payment" on your expense report. However, bribes to officials of foreign governments are forbidden.

Another topic raised in this tape: the fear of losing your job for reporting a code violation. The tape assures Grummanites of confidentiality and reminds them that it's part of their job to report improper activity.

You don't even have to give your name when you place such a call — just the area where you work. Obviously, it is more helpful when you do give your name as further questions may come up during the investigation.

Calls should be placed to any of the five Business Ethics Committee members: Howard Dunn, (516) 575-3810; Bob Bradshaw, 575-3344; Vice President-Controller Nat Busi, 575-7874; Vice President-Public Affairs Sandy Jones, 575-6622; or Vice President-General Counsel Tom Genovese, 575-3871.

Built To Last. *Grumman welder Rudi Compton works on a canoe at Grumman Boats' facility in Marathon, N.Y. (Photo by Bob Settles)*

Personals

My family and I wish to extend sincere appreciation and thanks to all our Grumman friends for their kind expressions of sympathy during the recent loss of my mother. **Bob McNiece**

My family and I would like to express thanks and appreciation for all the kind expressions of sympathy and support during the recent loss of my father. **Tony Grosso**

I would like to extend sincere appreciation to all my friends at Grumman for their prayers, flowers, visits and support which helped me recover more than the doctors thought possible. I would like you to know it really meant a lot to me at a very critical time in my life. **Lawrence R. Horan**

Our sincere and warmest thanks to all who showed expressions of love and sympathy during the recent loss of my mother. **Bernard F. Lang**

My family and I wish to express our sincere thanks and appreciation for the expressions of sympathy and the donation to the Long Island Early Fliers Club made in Fred's memory. **The Wohllebe Family**

My family and I wish to express our sincere thanks and appreciation to our friends and co-workers for their generosity and support after the recent loss of my mother. **William Kuhmann**

Next Issue: November 27

Is Your PC Immune To Computer Viruses?

The PC is a mixed blessing. On one hand, it enhances productivity by putting sophisticated computing power at the fingertips of more Grummanites every year. On the other, every time a new machine goes on line, chances are increased for the loss of data due to careless habits.

"Since most personal computers lack security controls, they are vulnerable to outside attack," says George Dunn, microsystems manager for the Systems Integrity department in Data Systems. "One of the biggest security threats to a PC is infection by a computer virus."

A computer virus is a set of coded instructions that sneaks into a PC, usually on a contaminated floppy diskette. Like a virus that invades a living cell, the computer version is self-replicating and has the ability to secretly infect new media. Once inside a PC, the virus performs a "hidden agenda" upon being "triggered." The trigger can be anything from a date such as Friday the 13th to the running of a particular application such as Lotus 1-2-3. The hidden agenda may be relatively benign, like the virus which intermittently made PC screens at British Telecom look like front-loading washing machines—complete with spinning washtubs. Or it may be designed to disorient and disturb the user, like the Falling Tears virus that caused the characters on PC screens in the Soviet Union to fall to the bottom in a heap. At their worst, viruses are malicious in nature, erasing files and causing system crashes, sometimes accompanied by messages such as "Arf! Arf!" or "Chomp! Chomp!".

"Identifying a machine as virus-infected is not always easy," says Dunn. "Most PC problems are not caused by viruses, but certain symptoms such as the appearance of unusual messages or graphics suggest their presence." Other signs of infection are unexplained disk or file erasures, sudden processor slow downs, questionable increases in file size or number, and frequent system crashes.

"If you suspect the worst, don't panic," says Dunn. "The most important thing is to isolate the problem—don't involve other machines. For example, if you insert a diskette, get an unusual message and have the screen go blank, don't test that diskette on every PC in the office. First shut the machine off, and then get professional help."

If you suspect viral infection of your PC, help is just a phone call away. Contact the Holtsville Help Desk, (516) 737-7777.

No Viruses

The "No Virus" symbol was designed by the Systems Integrity department in Data Systems as a reminder that safe computing practices should be followed at all times, even when no danger is apparent.

A Guide For Safe Computing

"Luckily," says George Dunn, micro systems manager for Data Systems, "there are a number of common sense precautions that all PC users can take to minimize the likelihood of infection and maximize their ability to recover." Safe PC practices are:

- First and foremost, make backup copies of important files every day prior to use; make frequent backups of your entire hard disk, retaining at least two generations at all times. Backups will not only help you recover from viral infection, but they will protect you against hardware failures, which are more likely to be encountered.

- Immediately write-protect and copy new software after opening; store the originals in a safe place and install the software with the copy, ensuring that the unmodified original will be available if needed.

- Never use "shareware" software on a company machine, because shareware is easily tampered with and a potential source of viruses. It is dangerous to use *any* software whose origin is unknown.

- Do not exchange software between your Grumman and home computers—since software is normally copyrighted, such action is both dangerous *and* illegal.

- Make only essential data file transfers between Grumman PCs, and never include operating system files or programs.

- Never install "game" software on a Grumman PC.

Obituaries

Martin Beltrami of Production Control, Great River, Electronics Systems Division, died Oct. 14 at the age of 53. He had been with the company since 1954 and resided at 245 Crombie St., Huntington, N.Y.

Kenneth F. Bohrer of ILS Resource Control, Bethpage, Aircraft Systems Division, died Oct. 24 at the age of 57. He had been with the company since 1965 and resided at 21 Bartley La., West Sayville, N.Y.

Donald F. Dumermuth of ILS Concepts/Service Engineering, Melville, Aircraft Systems Division, died Oct. 26 at the age of 65. He had been with the company since 1958 and resided at 115 Terry Rd., Sayville, N.Y.

William Hanlin of Maintenance, Glen Arm, Aircraft Systems Division, died Oct. 19 at the age of 62. He had been with the company since 1967 and resided at 1310 First Rd., Baltimore, Maryland.

Jodie Hennesseey of Chem Mill, Bethpage, Aircraft Systems Division, died Oct. 15 at the age of 63. She had been with the company since 1951 and resided at 2797 Woods Ave., East Meadow, N.Y.

Ralph Milito of C-2A Assembly, Bethpage, Aircraft Systems Division, died Oct 13 at the age of 58. He had been with the company since 1951 and resided at 916 North Erie Ave., Lindenhurst, N.Y.

Vito Santora of Paint Shop, Calverton, Aircraft Systems Division, died Oct. 12 at the age of 64. He had been with the company since 1956 and resided at 30 Midday Dr., Centereach, N.Y.

Retiree Obituaries

C. Raymond Beck at R.D. #1, Fort Ann, N.Y., died Oct. 22, 1989. He retired in 1965.

Ernest P. Braum of 23 Whaley Ave., Bethpage, N.Y., died Oct. 17, 1989. He retired in 1984.

Gerard G. Brinker of 3 Garden Blvd., Hicksville, N.Y., died Oct. 15, 1989. He retired in Jan. 1989.

Walter J. Budd of 790 Jackson Ave., Lindenhurst, N.Y., died Oct. 25, 1989. He retired in 1986.

John T. Clifford of 15 Mannes St., Lake Ronkonkoma, N.Y., died Oct. 7, 1989. He retired in 1978.

Frank J. Emmott of 1019 Little Whaleneck Rd., North Merrick, N.Y., died Oct. 12, 1989. He retired in 1981.

David J. Ferrie of 850 Little East Neck Rd., West Babylon, N.Y., died Oct. 24, 1989. He retired in 1980.

William K. Garrett of 3900 Bradfield Dr., Oxnard, California, died Sept. 24, 1989. He retired in 1985.

Jane E. Gibbs of 40 Mason Dr., Princeton, New Jersey, died Oct. 20, 1989. She retired in 1982.

Francis E. Goodman of 7121 Eversfield Dr., Raleigh, North Carolina, died Sept. 22, 1989. He retired in 1977.

Charles W. Hanemann of 1456 Potters Blvd., Bay Shore, N.Y., died Oct. 5, 1989. He retired in 1982.

Alyce A. Hickey of 7615 Black Hawk Rd., Micco, Florida, died Sept. 29, 1989. She retired in Jan. 1989.

Raymond Kelp of 254-41 St., Lindenhurst, N.Y., died Oct. 19, 1989. He retired in 1978.

Stephen Kotzer of 21 Sinclair Dr., Greenlawn, N.Y., died Sept. 29, 1989. He retired in 1985.

Martin MacNairney of Madison St., Sag Harbor, N.Y., died Sept. 29, 1989. He retired in 1974.

Michael Maglione of 239 Ontario Ave., Massapequa, N.Y., died Oct. 5, 1989. He retired in 1988.

Mary M. McCourt of 31 Mansfield Ave., Lakehurst, New Jersey, died Oct. 5, 1989. She retired in 1977.

Worth R. Perry of 62 Washington St., Ellsworth, Maine, died Oct. 9, 1989. He retired in 1974.

Thomas H. Picken at RFD 1, Rte. 103, Copntoocook, New Hampshire, died Sept. 9, 1989. He retired in 1975.

Edward Sengstacken of 333 Lewers St., Honolulu, Hawaii, died Oct 15, 1989. He retired in 1965.

Nicholas P. Terrone of 28 Chapel La., Levittown, N.Y., died Oct. 13, 1989. He retired in 1984.

Grummanites Loan Their Expertise To United Way

Most of what Frank Duffy knew about the United Way he learned from commercials that were squeezed in during NFL games. Gerry Kennedy and Louis Bejarano used to think of the United Way as a bureaucracy controlled from afar. And Jerry Goldmacher didn't realize how much good work the United Way was supporting on Long Island.

All four have learned a lot about the United Way since September, when they began their three-month assignment as part of the Grumman team of loaned executives.

"Since working with the United Way, we've definitely gotten a new perspective on how efficiently it works," says Goldmacher, Vice President of Operations for Space Systems Division. "There are only about 20 full timers. In the fall, some of the Island's larger firms help with the year's campaign effort. That's where we come in, and we've been very busy."

"We speak on behalf of the United Way at organizations all over Long Island," says Frank Duffy, a security investigator in Corporate Services. "We also meet with their management to help them plan a successful campaign."

Duffy has been concentrating on Nassau and Suffolk county government agencies; Bejarano and Kennedy have been working with mid-sized and larger companies; and Goldmacher has been working with some of the larger organizations and the United Way agencies themselves.

"Going into some of the agencies and seeing the good they accomplish has given me potent ammunition when I speak to corporate audiences," says Goldmacher.

Only Goldmacher had extensive public speaking experience prior to his United Way assignment. Kennedy, an Integrated Logistics Support program manager in Aircraft Systems, describes being handed the mike in front of 500 people at Citicorp as a moment of "stark terror."

"I was expecting 25 people," says Kennedy. "But the audience was friendly, and I think my words went over well. That speech gave me a lot of confidence." All agreed that improved public speaking ability will be a major benefit to them and Grumman when they return to their regular assignments in December.

Before speaking, each executive makes it a point to identify himself as a Grumman employee. "We've found that the Grumman name is respected everywhere we speak," says Bejarano, a program manager for Data Systems. "We're on the road every day and have visited many of our subcontractors. They've been very supportive, but so have people from other industries. All over the Island, people are pulling for Grumman, and that's made our United Way assignment even more satisfying."

Hitting the Road. *Grummanites (L to R) Jerry Goldmacher, Gerry Kennedy, Frank Duffy and Louis Bejarano head out from United Way headquarters in Melville to speaking engagements at various Long Island organizations. (Photo by Rich Breunig)*

Readership Survey

We don't want to do all the talking. We'd like to know what you think about the things you see in these pages. Your comments, suggestions and complaints are welcomed. Please take a few minutes and give us your opinions.

Article	Great	Good	Poor	Didn't Read
Budget Battle (P. 1)	[ ]	[ ]	[ ]	[ ]
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F-14 Update (P. 3)	[ ]	[ ]	[ ]	[ ]
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Name.....
Ext.....*(Required If You Wish A Reply)*
Division.....
[ ] I am a retiree

Mail to: Grumman World, A22-GHQ
1111 Stewart Ave., Bethpage, N.Y. 11714

The Search Continues For More Volunteers

A lot of Grumman people volunteer their services — from firefighting to visiting homebound seniors. In upcoming issues, *Grumman World* will highlight the efforts of some of those individuals. It will also list agencies and groups that need volunteers. Some of the work is short-term, just for a weekend, while other positions are for a longer duration.

Here are some non-profit groups that need volunteers:

The Long Island Alzheimer's Foundation and the Long Island Universities Center on Aging are co-sponsoring an all-day family care givers conference on Saturday, December 9, at L.I. University's C.W. Post campus. Volunteers are needed to help attendees with registration and direct them to workshops. Call the LIAF's office, (516) 767-9446.

WLIW needs volunteers for its on-air "Great Holiday Auction," December 1-10 from 8:30 p.m. to midnight. Supper will be included. Call Dotty, (516) 454-8866 for more information.

Long Island Association For AIDS Care (LIIAC) sponsors monthly volunteer opportunity workshops. Volunteers are especially needed to join the one-on-one hospital program. These volunteers visit people in the hospital or at their homes. Call (516) 385-AIDS for more information.

Glen Oaks Volunteer Ambulance Corps needs crew chiefs, attendants, drivers and dispatchers. Training is provided. Call (718) 347-1637.

What About My Group?

If you volunteer for a group that needs more people like yourself, drop us a line. To make sure that only legitimate, non-profit groups are listed, all agencies and groups must be approved through the Grumman Employee Contributions Office, (516) 575-3254. Groups and individuals can also write to: Grumman World—Volunteers, Grumman Corporation, A22-GHQ, Bethpage, N.Y. 11714. We'll pass the information to the Employee Contributions Office for approval.

Don't hesitate to enlist this service if your volunteer group is located off Long Island. All Grumman sites are invited to participate. For more information, call Grumman World, (516) 575-3293.